National Renewable Energy Laboratory

Join us on the second Thursday of every month for a series of "brown bag" seminars, sponsored by the National Renewable Energy Laboratory and the U.S. Department of Energy. Each seminar is held at NREL's Washington office with a videoconference link to Golden, Colorado. Topics focus on new and innovative renewable energy and energy analysis strategies, models, and technologies.

Energy Analysis Seminar Series

A "brown bag" analytical seminar series

Zero-Energy Homes' Opportunities for Energy Savings: Defining the Technology Pathways through Optimization Analysis

Ed Barbour

Ed Barbour, Principal
Navigant Consulting, Inc.
Thursday, December 11, 2003

Noon-1 p.m. (in Washington, D.C.)
10–11 a.m. (videoconference in Golden, Colo.)

Designing a home so that it doesn't have a net annual energy bill is now a reality – the difficult part is designing it cost effectively. The U.S. Department of Energy (DOE) and Navigant Consulting, Inc. (NCI) have created the first analytic model designed specifically to address this challenge. Using an optimization approach, DOE's Building Technologies Program and NCI have created a tool to evaluate energy-saving technologies in several climate regions. The tool helps identify the system of technologies – for the lowest potential installed cost – that can achieve zero-energy performance in each region. The analysis examines various prototypes of the new, single-family detached homes (based on region), including heating and cooling equipment, water heating equipment, lighting, large and small appliances, photovoltaic cells, and envelope components. A menu of economical, high energy-saving technologies is created, which allows for the design and construction of affordable zero-energy homes for multiple locations and markets. The results of the analysis, which will be discussed at the seminar, show the research and development necessary to reach the net zero-energy homes future.

Edward Barbour is a principal in the Energy Technology and Policy section of Navigant Consulting, Inc. He has been a consultant to DOE, the Energy Information Administration (EIA), building product manufacturers, private gas and electric utilities, and energy trade associations. His work is largely in technology management and market assessment, with particular interests in linking business and technology strategies, accelerating the product development process, and the effective management and commercial adoption of research and development (R&D). Barbour has a master's from the University of Maryland and a bachelor's in mechanical engineering from the University of Virginia.

Golden, Colo., information

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Building 27, Conference Room 230 A/B

Please contact Lynne Fenn at lynne_fenn@nrel.gov or 303-384-7439

Washington, D.C., information

901 D Street SW (also the Aerospace Building, 370 L'Enfant Promenade), adjacent to the Forrestal Building

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For more information on NREL analysis, please visit the Web site at
http://www.nrel.gov/analysis